

DOCUMENT RESUME

ED 320 952

TM 015 236

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TITLE Conflict Management Styles Predicted by Managerial
Frames of Reference.
PUB DATE 5 Jun 90
NOTE 46p.; Paper presented at the International Conference
of the International Association for Conflict
Management (3rd, Vancouver, Canada, June 13-16,
1990).
PUB TYPE Reports - Research/Technical (143) --
Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Administrator Characteristics; *Administrators;
Comparative Testing; *Conflict Resolution; Factor
Analysis; Higher Education; Multivariate Analysis;
*Predictive Measurement; Test Reliability; Test
Validity
IDENTIFIERS *Management Styles; Managerial Frames of Mind Survey;
*Organizational Conflict Inventory

ABSTRACT

The measurement integrity of M. A. Rahim's Organizational Conflict Inventory (ROCI-II) and D. M. Roussel's Managerial Frames of Mind Survey (MFMS) was investigated, as was the relationship between scores on the two measures. Subjects were 369 managers from three types of organizations: (1) higher education; (2) not-for-profit public sector organizations; and (3) a for-profit corporation. Analyses conducted included classical reliability analyses, both exploratory and confirmatory factor analyses, and a multivariate analysis of relationships between the two measures. Results focusing on the measurement integrity of the ROCI-II are generally supportive of the measure, suggesting that it evaluates five dimensions, as postulated. Confirmatory factor analysis suggested that the scales were not orthogonal constructs. Results focusing on the measurement integrity of the MFMS are less favorable. Exploratory factor analyses supported the measure, but confirmatory analyses did not result in a reasonable fit of the model to the data. Results suggest the need for additional item refinement and construct elaboration. The canonical analysis identified some manager archetypes for further exploration. Six tables and two graphs present study data. (Author/SLD)

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**CONFLICT MANAGEMENT STYLES
PREDICTED BY MANAGERIAL FRAMES OF REFERENCE**

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TN 015234

ABSTRACT

Conflict is a fact of organizational life. The present study investigated the measurement integrity of Rahim's Organizational Conflict Inventory (ROCI-II) and Roussel's Managerial Frames of Mind Survey, and the relationships between scores on the two measures. Subjects were 369 managers from three types of organizations: (a) higher education, (b) not-for-profit public sector organizations, and (c) a for-profit corporation. Analyses conducted included classical reliability analyses, both exploratory and confirmatory factor analyses, and a multivariate analysis of relationships between the two measures.

CONFLICT MANAGEMENT STYLES

PREDICTED BY MANAGERIAL FRAMES OF REFERENCE

1. INTRODUCTION

In today's complex and ever changing world, conflict is a fact of life. It can also be said that "conflict is too pervasive in organizations to be ignored" (Tjosvold, 1989, p. 3). Management scholars, as well as practitioners, have identified conflict as one of the *touchiest topics* in the field of organizational behavior because of the potential for destructive outcomes when conflict occurs (Owens, 1981). Conflict can occur (Rahim, 1986) when individuals and/or groups are forced to interact in a manner incongruent with their unique needs and interests; when satisfaction for one party leads to dissatisfaction for the other; when mutually desirable resources are in short supply; or when there is a perceived difference in attitudes, values, skills, and goals between the individuals or groups.

Conflict, depending upon the participants, can take a number of forms: intrapersonal, interpersonal, intragroup, intergroup, and international (Deutsch, 1973; Rahim, 1986). The present study dealt with the second type of conflict, interpersonal conflict, i.e., organizational conflict occurring between individuals. Also called *dyadic* conflict, the focus is on conflict between only two individuals, since conflict between more than two people may involve the intervention of a third party for coalition building, arbitration, mediation, litigation, or the exercise of group politics.

2. PREVIOUS RESEARCH

Conflict and Its Background

Traditionally, conflict has been seen as a disruptive, negative force to be avoided, if possible, or minimized, if not. For example, Litterer (1966) suggests, "Ideally it should not exist.... Eliminate it" (p. 179). However, some of the recurrent themes in more recent literature (Rahim, 1986; Thomas, 1976) have been that (a) a moderate degree of conflict may be a way to maintain optimal levels of stimulation, (b) it may force clarification of ideas or produce ideas of superior quality, (c) it can be goal-oriented versus irrational or destructive, (d) it may call attention to long-standing problems which require change, (e) it may force people to search for new approaches, (f) it may be useful for determining the balance of power, and (g) it may lead to unity of purpose as a useful by-product.

In spite of these useful consequences, researchers are not saying that conflict is intrinsically good. According to Rahim (1986), "a realistic view of conflict is that it has both productive as well as destructive potentials" (p. 3). Blake and Mouton (1970) stated that "Differences are intrinsically valuable" (p. 414). Thus, researchers are shifting the emphasis from *conflict elimination* to an emphasis on *conflict management* that keeps conflict productive as opposed to destructive (Assael, 1969; Bisno, 1988; Rahim, 1986). Some degree of conflict is deemed not only necessary, but unavoidable. Even Litterer (1966) agreed "that 'healthy' personalities actually seek to increase tension.... [and] one source of individual tension, organizational conflict..., [is] not only acceptable but useful" (p. 179). Interestingly, one study (Hall & Williams, 1966) even found that a lack of conflict weakened group performance somewhat, with the effect that the groups' fullest potential was not realized. Today, the concern is no longer how to achieve zero conflict, but rather how to realize an acceptable level of conflict.

Current Approach

For the purpose of studying conflict in organizations, management theorists (Blake & Mouton, 1970; Rahim, 1983c; Thomas, 1976, 1979) have tended to recognize five styles for handling conflict. Thomas (1976) reinterpreted the work of Blake and Mouton (1970) and built concepts on two distinctive, but not mutually exclusive theories: the Process Model and the Structural Model. The Process Model focuses on the internal variables of conflict situations (called conflict episodes), including: the frustration that is experienced, the way conflicts are mentally perceived or conceptualized, the actual behavioral actions and reactions, and the final outcome. The Structural Model focuses on external pressures and constraints, including: behavioral predispositions, social pressures, what is at stake and the degree of conflict of interest, and rules and regulations.

From Thomas' (1976) work came a popular five-style approach emphasizing the degree of satisfaction sought by each party in the conflict and represented by two discrete dimensions. One dimension plots cooperativeness or the willingness of one party to forego satisfaction of concerns at the expense of personal needs; the second dimension plots assertiveness, the party's desire to satisfy personal concerns. The five behavioral responses representing a different combination of preferences on each dimension are: competitive, collaborative, compromising, avoiding, and accommodating.

Paralleling Thomas' (1976) work, Rahim (1986) also used two dimensions to characterize the degree to which an individual will try to satisfy personal concerns and the concerns of the other party. Assigning different names to the five styles of handling conflict, Rahim summarizes them as follows: (a) *Integrating*—high concern for self and others. Openness, information exchange, and examination of both sides of an issue characterize this style. Integration leads to problem solving, often with the use of creative

solutions. (b) *Obliging*—low concern for self and high concern for others. Down playing of differences, emphasis of commonalities, and neglecting personal concerns for the sake of other people typify an obliging style. This approach may be used when one party perceives a benefit in giving something up for the sake of gaining something better.

(c) *Dominating*—high concern for self and low concern for others. A win-lose orientation, going all out to get results, and ignoring the wishes and needs of others describe a dominating approach. Trivial issues, the need for rapid decision making, or the necessity of implementing an unpopular course of action may require the use of this style.

(d) *Avoiding*—low concern for self and others. Withdrawal, buckpassing, and sidestepping are the terms often used to portray this style of conflict handling. At times virtually ignoring the problem may be the best way to deal with a trivial concern. This style is also useful when the disadvantages of resolving an issue may outweigh the advantages.

(e) *Compromising*—intermediate in concern for self and others. Give-and-take, equal commitment, mutually exclusive goals, and bargaining illustrate attitudes for this style. Compromising is useful when a mutually acceptable strategy is important for the resolution of an issue. Rahim (1985) cautions that overuse on this style may be dysfunctional.

Personality and Conflict

The study of personality by social scientists is often predicated upon an academic interest in predicting human behavior. Just as political scientists want to know how people are going to vote, sociologists are concerned with how individuals are affected by group norms and behavior, and cultural anthropologists focus on how mankind is affected by culture, so it is that psychologists try to understand how personality may impact

conflict, motivation, responses to group influence, as well as a host of other topics (Rotter & Hochreich, 1975).

In the 1960s Pondy (1966) implied the existence of a "standard personality type" that filled most formal roles in organizations and that personality had "little effect (relative to organization variables) on perceptions of conflict" (p. 255). At best he conceded the possibility that "non-standard personality types may explain variations in perceived conflict not explained by impersonal organizational variables" (p. 256).

By 1973, Deutsch acknowledged the role personality plays in determining whether a conflict will be either functional or dysfunctional. He examined both personal preferences and response to the personality of the other party. First, personality may dictate a more favorable evaluation of one approach over another. For example, Deutsch (1973) argued that a "competitive struggle may seem more manly or intriguing than... cooperation" (p. 373). People may develop a propensity to approach conflict in a certain manner in order to maintain a preferred image.

The second way that personality plays a role in determining whether an individual will take a competitive or cooperative stance relates to how an individual responds to another person's personality. For example, a participant's reactions "may result in misunderstanding and negative feelings and may, in turn, stimulate a competitive orientation to the conflict" (Deutsch, 1973, p. 373). Or, personality characteristics may precipitate mutual understanding, congeniality, compatibility, and cooperation. It is not unusual to hear people talk about someone who *just rubs me the wrong way* or someone *I just know I could become best friends with*.

Deutsch (1973), agreeing with Terhune's (1970) earlier views, acknowledges that the degree personality variables affect conflict behavior and outcomes is a function of

situational variables. Behavioral differences appear least in situations that are more competitive or threatening, with all personality types tending to behave in a competitive manner. Conversely, when a situation is more cooperative there is more tolerance when various personality types manifest themselves in different behaviors. As Deutsch (1973) notes, "the personal characteristics of one side cannot fruitfully be considered apart from those of the other side" (p. 374). As such, similarities in beliefs, attitudes, and values are more likely to generate compatibility and cooperation while dissimilarities foster antagonism and dissension. Finally, Terhune is credited with the position that "personality effects do seem influential and highly important in cooperation-conflict behavior.... [But] (c)ertainly the researcher should not be discouraged if personality effects do not just 'pop out' on first analysis, especially in complex situations" (p. 230).

As theorists (Baron, 1987, 1989; Chanin & Schneer, 1984; Jones & Melcher, 1982; Kilmann & Thomas, 1975; Mills, Robey & Smith, 1985; Rahim, 1983c) began to empirically examine the impact of psychological aspects of conflict handling behavior, results supported the existence of a relationship between personality variables and conflict-handling behavior. The present study was designed to investigate these relationships by focusing on psychological predispositions that are primarily outer-directed and have come to be labelled, managerial frames of reference.

Frames of Reference

The roles of psychological variables and their impacts on conflict handling behavior have been documented (Baron, 1987, 1989; Chanin & Schneer, 1984; Jones & Melcher, 1982; Kilmann & Thomas, 1975; Mills et al., 1985; Rahim, 1983c). One of the newer issues related to psychological predispositions involves how individuals perceive organizations. These paradigmatic perceptual predispositions have recently been explored

by Bolman and Deal (1984) and by Morgan (1986) in their presentations of managerial frames of mind and organizational metaphors, respectively. Both sets of authors take the position that managers functionally operate from a preconceived set of paradigmatic assumptions about organizations. This construct looks beyond managerial behavior to an individual's attitudes about the organization. The construct is situational in nature.

Bolman and Deal (1984) proposed four views of organizations based on the historical evolution of management theory. The study of organizations began with the classical theorists, who gave way to the human relations movement. From there theory evolved into today's systems and contingency models, and most recently a focus on organizational culture.

Tracking this evolution, Bolman and Deal (1984) assigned a frame of reference to each new way of thinking. The *structural frame* represents the assumptions of the early classical era, when the spotlight was on proper organizational structure and efficiency. People, then, were seen as objects and as being motivated largely by economic consideration.

Eventually, concerns for employees as human beings became more paramount. For Bolman and Deal the *human resource frame* parallels the assumptions of the human relations school of thought where autonomy and job satisfaction played a role in managing workers.

As theorists began to consider both the behavior of people and the nature of organizations, the systems approach came into being. Contingency theorists take the position that there is no one "best way" to manage, and that many situational variables create unique settings, each requiring different managerial behavior. Bolman and Deal

offer the *political frame* and its assumptions as a corollary for many aspects of the systems and contingency approach.

The latest and increasingly popular development, organizational culture theories, emphasize the concept of shared values and beliefs. Social units, i.e., organizations, are comprised of informal, as well as formal, elements which in turn contribute to organizations having their own unique "personalities." The search for meaning and shared values suggested to Bolman and Deal many of the assumptions assigned to the *symbolic frame* of reference. Probably the most unique factor characterizing this frame is the lack of rationality typified in the other three frames. Here rituals, ceremonies, stories, and myths replace rules and regulations, goals, and policies.

Recently, Roussel (1989) undertook the task of operationally defining Bolman and Deal's (1984) frames in the form of an instrument. She additionally chose to see if the assumptions for each frame could be cross-validated with existing measurements. She was successful in achieving the first goal with the creation of a 60-item survey that retained 37 items upon completion. Her progress toward the second goal was encouraging, however, problems arose over her selection of cross-validation instruments. Because the selected instruments were unidimensional, they were capable of capturing only one of the multi-dimensional aspects represented in the assumptions of each frame. There was also a problem related to the selection of instruments that required forced choices, thus classifying them as ipsative (Kerlinger, 1986, p. 463) in their statistical nature. Roussel's instrument is not a forced choice or ipsative measurement.

3. POSTULATES, PURPOSE, AND HYPOTHESIS OF THE STUDY

Postulates

1. Conflict is a complex component of organizational behavior and is affected and regulated by a host of other factors. Personality is one such factor which underlies the concept that different people are inclined to approach conflict in distinctly different, yet identifiable manners.

Recognizing that various approaches to conflict exist is important, but recognizing the factors that influence whether conflict will be constructive or destructive is imperative. Essentially, the useful effects of conflict and conflict management are a function of how they are handled. Some approaches lead to hurt feelings and negative consequences for those involved and for the organization (Baron, 1989; Bergmann & Volkema, 1989) while other approaches have been shown to usually lead to creative solutions that benefit the parties and the organization.

People are "predisposed to prefer one conflict mode over the others," as Chanin Schneer (1984, p. 877) suggest. As a result, "The identification of individuals' 'natural' predispositions toward conflict situations is a logical and potentially productive avenue of research" (Mills et al., 1985, p. 1135).

2. Conflict management styles are selected cognitively. Although most managers have a dominant or preferred style, they also often have a backup style.

The behavior selected by managers in a conflict situation is not merely a function of using "automatic pilot" but is rather a choice born of a thoughtful analysis of the situation and the players. Another way of stating this might be to call the five approaches *strategies* for handling interpersonal conflict rather than *styles*. Because few managers have been given the opportunity to consciously inventory their preferred

approach to handling conflict, it is likely they operate more from what Blake and Mouton (1964) called a dominant style with a backup style that is used when the dominant style is inappropriate or does not work.

Ideally, as managers learn to recognize their dominant and back-up styles they can then move from the realm of operating from a selection of conflict styles dictated by habit to that of consciously developing and using conflict strategies. That means managers can then incorporate their lesser used or unused styles into their armory, depending upon the unique elements of future conflict episodes. These new styles would then become a viable part of the manager's repertoire of conflict handling strategies.

3. As individuals' preconceived views of the realities of organizations affect the type of behavior they use in an organization, it stands to reason that, based on those views, they deal with conflict episodes differently.

One potential way to develop the relationship between personality and conflict management, as well as pay more attention to external factors, is to test the idea that people's perspectives impact what they see. If Roussel (1989) is correct, a valid instrument will make it possible to determine whether managers maintain a "single, dominant frame of mind" or "employ a variety of perspectives in viewing organizations" (p. 16). She also suggests that if managers are to learn how to think about situations from different frames of mind, they must first be able to identify their own frame(s). They must develop and extend their abilities to "read" organizations if they are going to be able to apply other frames. Admittedly, this can be difficult and may seem alien. Using Bolman and Deal's (1984) own words:

For some people, the concept of choice in defining problems and selecting alternatives seems unnatural. They tend to see one frame as right and

others as wrong; some as useful, others as silly or unrealistic; one or two as appealing but the others as repellent. Their own common-sense personal theory of organizations is well defined and well defended. When another frame confirms their predictions, they are happy to embrace its message. When it challenges their assumptions, they want to deny or attack its message. (p. 246)

If organizations and managers were operating in stable environments they might be able to survive using only one or two frames. Rapid environmental changes, on the other hand, present opportunities for increased conflict. The opportunity to use frames of reference as a potential tool to assist managers in understanding and dealing with organizational conflict is compelling.

When managers learn how to consider actions and reactions from different perspectives and acknowledge the possibility that another perspective might make sense, they are, to use Bolman and Deal's (1984) terminology, reframing. Even if a frame appears to be unsuitable or misguided, it helps to recognize the frame. Bolman and Deal hope to contribute to the field the concept of frame-flipping—the ability to see an organization through four different lenses. The result could be flexibility in thinking, which should encourage flexibility in action and the functional use of a variety of conflict management styles.

Purpose of The Study

The purpose of the present study was to examine the relationship between conflict management styles and managerial frames of reference, an external factor that may either suppress or encourage organizational conflict. The external focus revolves around an examination of how individuals view the organizations with which and in which they

interact. The present study was designed to test the assumption that there is a relationship between the styles of handling conflict and managerial frames of reference and to test for the existence of certain managerial frames of reference classifications that may be linked with preferred styles for managing conflict.

Hypothesis

In addition to hypothesizing a relationship between styles of handling conflict and managerial frames of reference, the following specific predictions were formulated:

- A: Individuals classified as using a structural frame of reference will prefer the dominating style of handling conflict.
- B: Individuals classified as using a human resource frame of reference will prefer the obliging style of handling conflict.
- C: Individuals classified as using a political frame of reference will prefer the compromising and dominating styles of handling conflict.
- D: Individuals classified as using a symbolic frame of reference will prefer the obliging and avoiding styles of handling conflict.

4. METHODOLOGY

Sample

The design of this study was driven by the desire to examine dyadic organizational conflict, as well as to further develop the operationalization of the managerial frames of reference construct. The study therefore lent itself to the selection of a variety of sample organizations based on an identifiable set of research requirements. For example, Rahim (1989), an outspoken critic of the irresponsible use of small, nonrandom, and/or student samples, polled a random, national sample of 1,219 executives from 25 industries for the

development of his final version of the ROCI-II instrument (Rahim, 1983c). The executives were classified by their functional area including: Production, Marketing, Finance and Accounting, Personnel, General Management, R & D, Engineering, and Other (p. 8). In the spirit of prudence and exercising academic responsibility, in the present several diverse nonstudent samples were employed. Three very general typologies were represented in the present study: for-profit, not-for-profit, and higher education. In this way factors such as disparate goals and purposes could be controlled.

The survey population included 911 employees serving in supervisory capacities in four different types of organizations: for-profit subsample—a regional office for American Telephone and Telegraph (AT&T); not-for-profit subsample—the Fire Department (FD) and the Sewerage and Water Board (S&WB) in an urban community; and higher education subsample—14 public, four-year institutions of higher education in the state of Louisiana. A regional AT&T office provided a population of 112 supervisory personnel and because all 112 supervisory personnel were included the selection procedure cannot be classified as random. The not-for-profit population included 200 fire department officers and 349 supervisors from the Sewerage and Water Board. Once again, all Fire Captains, District Chiefs, and Deputy Chiefs were surveyed as were all supervisory S&WB employees.

Finally, the higher education subsample of 250 positions came from the population of college deans, department chairpersons, and staff managers serving in the 14 public, four-year colleges and universities in the State of Louisiana. For this subsample the selection procedure was random in nature. Specifically, a sample of 150 academicians was randomly drawn from the list of 622 deans and chairpersons. The selection of the staff supervisors involved identification of 30 generic positions commonly represented in

institutions of higher education (e.g. Comptroller, Bookstore Manager, Physical Plant Director, Campus Security Chief, and Registrar). College catalogues were used to create a master list identifying 351 positions which actually exist in the 14 Louisiana institutions. Again, computer-generated random selection was used to isolate 100 sampled positions. Thus, 250 individuals in higher education received the survey instrument.

The surveys were distributed and returned through internal mail for the AT&T, Fire Department, and S&WB subsamples. The higher education subsample was distributed and returned using the U. S. Postal Service. Table 1 presents the response rate of useable surveys for each of the subsamples.

Table 1
Subsample Distribution and Survey Response Rate

<i>Subsample</i>	<i># Distributed</i>	<i># Returned</i>	<i>Response Rate</i>
Regional AT&T Office	112	52	46.4%
Fire Department	200	108	54.0%
Sewerage and Water Board	349	113	32.4%
Higher Education - Staff Positions	100	40	40.0%
Higher Education - Deans and Chairs	<u>150</u>	<u>56</u>	<u>37.3%</u>
Total	911	369	40.5%

Instruments

Rahim Organizational Conflict Inventory - ROCI-II

The Rahim Organizational Conflict Inventory-II (ROCI-II, Rahim, 1983c) is one of the most recently developed instruments designed to measure preferences for handling conflict. Although "not yet widely used in conflict research, it [ROCI-II] shows significant promise as a research tool," according to Weider-Hatfield (1988, p. 364). Based on the conceptual framework first presented by Blake and Mouton (1964), the ROCI-II uses a similar two dimensional approach. The two fundamental dimensions against which

Rahim's five styles are plotted on degree of concern for satisfying self and degree of concern for satisfying others, the same dimensions delineated by Thomas (1976). Deviating slightly from Thomas, the ROCI-II's five styles—followed by the Thomas designations in italics—are: (a) integrating (IN), *collaboration*; (b) obliging (OB), *accommodating*; (c) dominating (DO), *competing*; (d) avoiding (AV), *withdrawal*; and (e) compromising (CO), *compromising*.

An important distinction between the Rahim (1983c) instrument and the Thomas and Kilmann (1974) instrument involves the conceptualization of conflict dispositions (Thomas, 1988; Womack, 1988). Thomas and Kilmann's (1974) MODE assumes that a respondent's predisposition can be detected across situations and it measures intended outcomes rather than behaviors which can change from situation to situation. Thomas (1988) explains that although intent is acted out through behavior, the behavior sometimes clearly signals intent, while other times behavior is ambiguous and can vary from situation to situation. The ROCI-II, therefore, reflects an assumption that the situation impacts the conflict behavior being measured. As such, the ROCI-II contains three forms assessing the five independent styles of handling interpersonal conflict: Form A for conflict with the respondent's boss, Form B for conflict with the respondent's subordinates, and Form C for conflict with the respondent's peers. The items representing various behaviors are the same on all three forms except for the word *boss*, *subordinate(s)*, or *peer(s)* appearing on the appropriate form. Form B was used for the present study.

The ROCI-II begins with instructions to the respondent to recall as many recent incompatibilities, disagreements, or differences (i.e., conflict) as possible in order to rate 28, 5-point Likert items ranging from strongly agree, signified by a "5", to strongly

disagree, signified by a "1". Respondents are told that there are no right or wrong answers and that their responses should reflect their most characteristic behavior in conflict situations. In the present study the response scheme was altered and an "unnumbered graphic response" format (Thompson, 1981) was used to maximize systematic variability and thus reliability. An unnumbered line was drawn across the page below each item with SD (Strongly Disagree) on the left margin and SA (Strongly Agree) on the right margin of each line. Subjects were instructed to draw through each line at the point which best indicated their perceptions. A transparency with grids marked 1 to 16 was then used by the researchers to score each response. The higher the score for each of the five styles, the greater is the predisposition for handling conflict with that particular style.

The issue of a social desirability bias was address by Rahim (1983b) in a study conducted with MBA and undergraduate students. Data from the Personal Reaction Inventory (Crowne & Marlowe, 1960) and the Lie scale from the Eysenck Personality Inventory (Eysenck & Eysenck, 1968) were correlated with ROCI-II scores. The Personal Reaction Inventory measures a respondent's tendency to respond to questionnaire items in a socially desirably manner. The higher the score the greater is the social desirability response bias. The Lie scale of the Eysenck Personality Inventory detects attempts to falsify responses on a range from 0 to 9. The higher the score, the greater is the response distortion bias.

Pearson correlation coefficients were computed between the three conflict scales and the social desirability and lie scales. The findings showed:

marginal but significant positive correlation between the social desirability (SD) and integrating scales ($r=.29, p<.001, N=264$) and between the Lie and

integrating scales ($r=.14$, $p<.05$, $N=279$). Other conflict scales did not correlate with the SD and Lie scales. The correlation between the SD and Lie scales was $.46$ ($p<.0001$, $N=249$). (Rahim, 1983a, p. 373)

Thus, with the exception of the integrating style, the ROCI-II subscales are relatively free from social desirability or response distortion bias. And even the largest common variance coefficient, $r^2 = .08$ for the integrating scale, cannot be interpreted as a strong relationship.

Regarding the internal consistency (reliability) of the ROCI-II, Rahim (1983c) tested all five scales of conflict style and calculated Cronbach's alpha, Spearman-Brown reliability, Guttman's lambda, and Kristof's unbiased estimate of reliability. Except for the Spearman-Brown reliability coefficient for *compromising* ($r = .67$) the coefficients were all greater than or equal to $.71$ and no greater than $.77$. In another evaluation of the ROCI-II, Weider-Hatfield (1988) surveyed eight studies estimating reliability coefficients, all using Cronbach's alpha constructed using three different methods. The lowest coefficient among the eight was $.50$ for obliging and the highest was $.95$ for integrating. Average alpha coefficients across the eight studies ranged from a mean of $.61$ for compromising to $.81$ for avoiding. Similar to results for Thomas' MODE instrument, four of the five styles fail to meet the minimum standard of $.80$ for internal consistency suggested by Nunnally (1978). Rahim responded by pointing out that the differences among the coefficients of internal consistency of the five scales, using the three methods, were not substantial (Rahim & Psenicka, 1984), and that the other conflict instruments also fall short of this criterion (Rahim, 1983c).

Similarly, the test-retest reliability coefficients range from moderate to good for all subscales except compromise. These correlations ranged from $.60$ for compromising to $.83$

for integrating, as compared with ranges between .61 and .68 for Thomas-Kilmann's MODE (Thomas & Kilmann, 1978). The ROCI-II reliabilities were computed using data collected from 119 students who completed the instrument two times, one week apart.

Regarding content validity, the issue of whether the ROCI-II test items adequately represent the behavioral strategies used to manage organizational conflict, "Clearly, the items... appear to be representative of the constructs they aim to assess.... Rahim's approach to selecting items seems careful and methodical... [and] the items are worded in a manner that facilitates ease in understanding and completing the instrument" (Weider-Hatfield, 1988, p. 358).

Construct validity is also of special concern. Because many of the instruments developed prior to the ROCI-II generated mixed evidence for the independence of the five scales of conflict, Rahim approached this issue very carefully (Weider-Hatfield, 1988). In fact, the stated objective of his 1983 study (Rahim, 1983a) was to construct factorially independent scales to measure the five distinct styles of handling conflict, as well as to provide empirical evidence of reliability and validity. In the study, measures of role status and sex were used to test the empirical validity of the scales. Because "In superior-subordinate communication, subordinates frequently say what is acceptable rather than what they know is true" (p. 371), Rahim expected to find a respondent more obliging with superiors than with a subordinate or peer. Rahim cited earlier studies to suggest that subordinates may be more likely to withdraw from a conflict situation, thus he expected that respondents would use the avoiding style most with superiors, less so with peers, and the least with subordinates. Earlier research also reported that the order was reversed for the use of forcing, used most with peers and least with superiors. Finally, compromising was expected to be used most with peers, since both parties have

equal power in a conflict situation. Regarding sex differences, Rahim stated, "that males are more dominating and less compromising than females in conflict situations....

Therefore sex was employed for validation purposes" (Rahim, 1983a, p. 371).

Interestingly, more recent studies provide mixed results (Weider-Hatfield, 1988) regarding the independence of the five factors. A 1987 doctoral dissertation (Patrick, 1987) reported a factor analysis of data from 539 students; his results generally supported Rahim's findings. However,

both factor analyses and correlations among the five subscales suggest that the instrument might be assessing three, not five, factors: dominating, which appears to be a unique dimension, integrating, which combines items from both the integrating and compromising scales, and avoiding, which includes items from both the avoiding and obliging scales. (Weider-Hatfield, 1988, p. 355)

Weider-Hatfield (1988) also addresses the issues of concurrent and predictive validity first by contrasting them. "Concurrent validity attempts to link a construct to a criterion that exists in the present, while predictive validity concentrates on predicting behavior, typically in the future" (p. 359). Two studies yielding information about the concurrent validity of the ROCI-II both support the measure's concurrent validity. Predictive validity of the measure, "the most difficult standard for any self-report instrument to meet" (Womack, 1988, p. 441), has not been sufficiently examined at this time. Most studies have, instead, focused on the respondents' predispositions and perceptions of their behavior.

Most recently, Fearing and Dean (1989) presented research results for a side-by-side study of the MODE and ROCI-II. Both instruments were completed by 96

undergraduate management students with a demographic makeup of 63% males and 33% females and an average age of 21.7 years. Subjects completed the instruments consecutively in their original form, that is the MODE as an ipsative or forced-choice device, and the ROCI-II using 5-point Likert scales.

The authors were primarily interested in two issues: (a) internal consistency reliability across the subscales of both instruments and (b) concurrent validity. Fearing and Dean (1989) computed Cronbach alphas for the five subscales of each instrument noting that both instruments presumed to draw upon the same assumptions, namely the identification of styles of behavior typical or not typical of subjects in situations of interpersonal conflict. The MODE alpha coefficients ranged from a low of .48 for avoiding to a high of .62 for competing, whereas the ROCI-II ranged from a low of .54 for compromising to a high of .81 for integrating. In all cases the subscales for the ROCI-II generated higher reliabilities than the MODE. Table 2 presents a comparison of the coefficients reported by the developers of the respective instruments and those of Fearing and Dean.

Table 2
Comparison of Cronbach's Alpha Coefficients across Scales

<i>Styles</i>	<i>MODE</i>		<i>ROCI-II</i>	
	Thomas	Fearing & Dean	Rahim	Fearing & Dean
Integrating	.65	.59	.77	.81
Obliging	.43	.55	.72	.55
Dominating	.71	.62	.72	.72
Avoiding	.62	.48	.75	.77
Compromising	.58	.51	.72	.54

Note. Conflict style labels are expressed in ROCI-II terms.

It has been noted (Womack, 1988) that researchers using conflict instruments usually find lower reliability coefficients than those reported by the instrument's developers. In this case, for the MODE instrument Fearing and Dean upheld this tradition for all but the obliging style, for which they reported a substantial improvement. Comparing coefficients for the ROCI-II, Fearing and Dean equalled or bettered Rahim's figures for three of the five styles and for the remaining two found appreciably lower internal consistency. It should be noted that the number of subjects used for the MODE was 76 which is comparable to Fearing and Dean's sample size of 96, whereas Rahim used an n of 1,219.

Next, Fearing and Dean (1989) examined the subscale intercorrelations within the instruments. Because the ROCI-II data revealed some moderate positive correlations among the dominating and integrating styles, the authors deduced that the styles share a common dimension, thus "leaving some doubt concerning their orthogonality" (p. 4).

Finally, because both the MODE and ROCI-II were designed to identify an individual's most likely response to conflict episodes, Fearing and Dean (1989) compared the dominant styles identified by both instruments for each subject. For 96 subjects, only 24 were similarly classified by both instruments. Oddly enough, the greatest convergence was between two of the subscales on which the 18 individuals who identified dominating as their primary style on the MODE fell into the integrating style on the ROCI-II. Again, Fearing and Dean question the orthogonality of the two constructs. Absent from their discussion was the issue of the ipsative nature of the MODE's data and any subsequent problems in comparing results.

Rahim (1989) is critical of Fearing and Dean on two counts. First, he chided them, as well as many others (e.g., Patrick, 1987), for using a collegiate sample to collect data from an instrument designed for managers who have had meaningful work experience.

He asserts that undergraduate students completing the forms for learning purposes cannot provide data adequate for research purposes. Second, Rahim criticized the nonrandom feature of the sample used. He noted that many studies using both nonrandom and collegiate samples have reported problems of orthogonality of the five styles of handling conflict. Although Fearing and Dean did not run a factor analysis, Rahim also points out the inadequacy of using nonrandom samples for testing the factor structure of the ROCI-II.

Womack (1988, p. 443) compliments the ROCI-II author for the measure's careful development and testing with the large executive sample, for support of the five-factor structure first proposed by Blake and Mouton, and for the use of different forms for superiors, subordinates, and peers. Weaknesses cited include the fact that ROCI-II scores are normed only for a managerial population and the relative difficulty in scoring the ROCI-II compared to other instruments in the field. The scoring difficulties mentioned are mechanical in nature. When using the published score sheets, the first step after completion of the form requires the adding together of all the answers found in triangles, squares, circles, diamonds, or ovals and then dividing by the appropriate number of items representing that style. This method is a bit taxing, visually, as well as time consuming when done in applied settings, such as field training and management seminars. These considerations, however, were not relevant to the present research application since the items were presented in a format different from that on the published score sheets.

Managerial Frames of Mind Survey - MFMS

Roussel's (1989) interest lay in the area of the role of leadership in organizational effectiveness and more specifically in how leaders perceive organizations, a relatively new topic of study. Previously, leader effectiveness research had been conducted by

observation of traits and behaviors, investigation of situational variables, and a study of its relationship with attribution theory. More recently, researchers and theorists added the variable of perspectives, metaphors, or frames of mind as they relate to the way organizational leaders act—a shift in focus from actions to attitudes. According to Roussel's research, various perspectives can be linked to managerial assumptions regarding how problems are defined, what factors should be considered, how events should be evaluated, which decision-making strategies ought to be used, and standards by which "truth" is measured. "Assumptions, in turn, are thought to vary depending upon alternative managerial paradigms. As paradigmatic assumptions change, so do the characteristics of the administrator's practice" (p. 5). These assumptions are carried around in the managers' heads and ultimately form the managers' views of organization.

Roussel's (1989) efforts focused on: (a) translating Bolman and Deal's four sets of assumptions into survey items, (b) formulating the internally consistent items into an instrument representative of the four frames of reference, (c) validating the construct by testing hypotheses by using subscales of related instruments, and (d) refining the instrument by the use of item analysis, reliability analysis, and factor scale construction. She began by using brainstorming sessions attended by 10 graduate students who were well acquainted with Bolman and Deal's (1984) frames as well as Morgan's (1986) metaphors. Using the paradigmatic assumptions as a guide, students developed vocabulary lists, questions, and examples for each of the frames. This was done so that test items for each frame would be consistent in language, situations, and reactions unique to the related paradigmatic assumptions. An average of 20 items per frame were generated, individually typed on 80 index cards, and returned to the graduate students for ranking.

The ranking technique selected was the *Q-sort*, chosen for its ability to test for content validity. This methodology is particularly useful when "it is more important to make comparisons among different responses within persons than *between* persons" (Nunnally, 1978, p. 613). The cards were mixed together and returned with four envelopes labeled "structural," "human resource," "political," and "symbolic." Instructions directed the students to sort the cards into four piles on the basis of which frame was best represented by the item. The cards were then placed in their respective envelopes and returned to Roussel. Of the original 80 items, 60 items classified identically by at least 72% of the subjects were retained, and were arranged in the final instrument titled *The Managerial Frames of Mind Survey (MFMS)*. Roussel also noted that 52 of the 60 items were classified the same by between 88% and 99% of the subjects and that the symbolic items received the lowest item agreement across raters.

The population from which Roussel (1989) drew her final sample consisted of the 1,869 Louisiana elementary and secondary principals from the public, private, and parochial school systems. Four hundred principles from 400 schools were selected and mailed test booklets, of whom 248 responded for a 62% return rate. Roussel did not describe her selection procedure, therefore it is not possible to say whether her sample was random. Instructions directed the subjects to think about how frequently they engage in the listed behaviors and to indicate their responses using a five-point Likert scale. A "1" represented "never" and a "5" represented "always." Completed test booklets were returned by mail.

In addition to the MFMS instrument, subjects were asked to supply demographic data and to complete subscales from the following instruments: the Leader Behavior Description Questionnaire (LBDQ, Stodgill, 1963), the Myers-Briggs Type Indicator

(MBTI, Myers & McCaulley, 1985), and the Edwards Personal Preference Schedule (EPPS, Edwards, 1959). The subjects ranged in age from 31 to 70 with a mean of 47 years. The modal tenure at their respective schools fell into the five year category and the largest number of years of administrative experience was 10 years. Of these three demographic variables, age was the only one to correlate with the frames of reference. Older principals were inclined to score higher on the structural frame than the other frames. Because the effect size was minimal, Roussel considered the impact to be "negligible."

As already stated, one of Roussel's (1989) primary objectives was to test for construct validity, to determine if the construct exists and whether the instrument is internally consistent. Roussel hoped to find that the items associated with each set of assumptions would covary. She also identified and correlated other scales or measures sharing a conceptual logic with the four frames to further support her efforts to validate the MFMS. The production and consideration subscales of the LBDQ were selected because of their logical relationship with the structural and human resource frames of reference, respectively. The dominance subscale of the EPPS, a measure of relatively independent personality variables, was linked with the political frame. The Sensing-Intuition portion of the MBTI was chosen to validate the symbolic frame of mind since sensing and intuiting refer to an individual's preference to perceive the world in either factual, realistic ways or inherently imaginative ways.

Roussel (1989) began her validation analysis by factoring the 60 responses on the MFMS. The principal components method with varimax rotation was used with the goal of eliciting only uncorrelated orthogonal patterns. Results were encouraging. In general, Factor I involved the human resource items, Factor II the symbolic items, Factor III the

political items, and Factor IV the structural items. Factor structure coefficients for each of the 60 items were examined and used to eliminate poor or confusing items and to guide the retention of items in the final instrument. For item inclusion Roussel chose to keep items correlated with factors that were located above the leveling point of the graph of eigenvalues, that had a factor structure coefficient of absolute .30 or higher, and that met the requirement that an item share a conceptual commonality with the other items in that factor group. Items that linked with more than one factor faced an additional requirement: the difference between the structure coefficients had to be at least .15 to be retained.

Of the original 60 items, two were dropped for failure to meet the .30 cutoff. Nine items were purged for loading on factors different than the one for which they were designed. Eight additional items were eliminated for a variety of reasons such as: (a) not loading on the four primary factors, or (b) not meeting the .15 difference for double loaded items. Eventually, 37 of the original 60 items were kept as the final instrument. Table 3 presents the first four prerotation eigenvalues, and the reliability coefficients for each scale.

Table 3
Selected Prerotation Eigenvalues and Reliability Coefficients

<i>Unrotated Factor</i>	<i>Eigenvalue</i>	<i>Scale</i>	<i>n of Items</i>	<i>alpha</i>
I	11.18	Human Resource	11	.82
II	5.07	Symbolic	7	.81
III	2.44	Political	10	.79
IV	2.10	Structural	9	.73
		Total	37	.85

Note. Roussel (1989) associated prerotation eigenvalues with the factors after rotation, and only reported the first four eigenvalues (Thompson, 1989b).

In the present study the original 37 retained items were used, but with some important alterations. First, the items originally designed to measure teacher behavior were reworded to reflect a generic organizational meaning and the form was changed from a phrase to subject-verb sentence format using the personal pronoun, I. For example, the original item "Work to improve teacher morale" was changed to read "I work to improve employee morale." The 5-point Likert response scheme ranging from never to seldom to occasionally to often to always was changed to the unnumbered graphic response format, with SD (Strongly Disagree) on the left margin and SA (Strongly Agree) on the right, scored from 1 to 16. Instructions were left relatively intact and directed the respondent to "Think about how frequently you engage in the behavior. Mark your response on the SA--DA line to extent you Strongly Disagree or Strongly Agree. There are no right or wrong answers."

Procedure

The survey packets were delivered to the 911 supervisors and included a demographics sheet, as well as the two instruments. Anonymity was assured. The demographic sheet invited responses regarding age, total number of years of work experience, total number of years of supervisory experience, gender, ethnic origin, current employment, and education level.

5. RESULTS AND CONCLUSIONS

Preliminary analyses were conducted first to provide further evidence regarding the measurement integrity of the two instruments employed in the study. The initial series of analyses focused on the internal consistency reliability of the measures. The statistic of choice was Cronbach's alpha, a lower bound estimate of reliability. The alpha

coefficients for the Integrating, Obliging, Dominating, Avoiding and Compromising scales of the ROCI-II were .85, .70, .72, .75, and .72. As noted in Table 2, these values are generally comparable to those reported by Rahim (1983c) and comparable to or superior to coefficients reported by Fearing and Dean (1989).

The alpha coefficients for the four scales in the frames measure were: Human Resource, .80; Symbolic, .74; Political, .81; and Structural, .64. These results are generally comparable to those reported by Roussel (1989), except with respect to the six-item Structural scale, for which Roussel (1989) reported a coefficient of .73, as against the .64 value in the present study.

As Thompson (1989a) emphasizes, factor analysis is intimately tied to questions of construct validity. Therefore, both measures were also subjected to both exploratory and confirmatory factor analytic methods. Figure 1 presents the "scree" plot of the first 11 eigenvalues of the correlation matrix associated with the ROCI-II. The plot does support the extraction of five factors, as expected. Table 4 presents the varimax-rotated structure coefficients derived in a principal components analysis. Though there is some deviation from expected item structure, in general it appears that factors I and IV measure Integrating and Dominating, respectively. Factor II measures Accommodation to the wishes of subordinates, realized through being **either** obliging or compromising. Factor V differs from factor III in that factor III appears to measure Avoidance of Interpersonal Conflict (e.g., "avoid an encounter"; "stay away from disagreement"; "avoid unpleasant exchanges"), while factor V seems to measure Avoidance of Position Taking. A list of items associated with factor V suggests that items correlated with both factors tend to emphasize withdrawal (emphasis added):

06. I usually avoid open discussion of my differences with my subordinates. (.71 on factor V; .21 on factor III)
03. I attempt to avoid being "put on the spot" and try to keep my conflict with my subordinates to myself. (.59 on factor V; .43 on factor III)
07. I try to find a middle course to resolve an impasse. (.57 on factor V; .04 on factor III)
14. I usually propose a middle ground for breaking deadlocks. (.42 on factor V; .55 on factor II)
26. I try to keep my disagreement with my subordinates to myself in order to avoid hard feelings. (.34 on factor V; .69 on factor III)

INSERT FIGURE 1 AND TABLE 4 ABOUT HERE.

A LISREL confirmatory factor analysis of the correlation matrix, testing the fit of a five-factor model with uncorrelated factors, indicated that the model was a poor fit to the data (chi-square = 1303.18, $df=350$; goodness of index = .79). However, a five-factor model positing correlated factors was a better fit to the data (chi-square = 102.36, $df=340$; goodness of index = .83).

Figure 2 presents the "scree" plot of the first 14 eigenvalues associated with the Roussel (1989) measure. The existence of four principal components is suggested, as theoretically expected. Table 5 presents the varimax-rotated structure matrix. In general, the factors seem to measure the Political, Human Resource, Symbolic, and Structural frames of reference, respectively.

INSERT FIGURE 2 AND TABLE 5 ABOUT HERE.

A LISREL confirmatory factor analysis of the correlation matrix, testing the fit of a four-factor model with uncorrelated factors, indicated that the model was a very poor fit to the data (chi-square = 3069.95, $df=629$; goodness of index = .64). A four-factor model positing correlated factors was also a poor fit to the data (chi-square = 2808.52, $df=623$; goodness of index = .66).

The substantive hypothesis of the study, involving relationships between conflict management styles and managerial frames of reference, was investigated using canonical correlation analysis (Thompson, 1984, 1990). Table 6 presents the correlation coefficients among orthogonal factor scores across the study's two measures; all scores within each variable set were perfectly uncorrelated since the factors were rotated orthogonally. Table 7 presents the results of the canonical analysis.

The most noteworthy relationship presented in Table 6 involves the association ($r=.68$) between a preference for Integrating and the Human Resource frame of reference. However, a preference for Integrating was also somewhat associated with the Political ($r=-.16$) and the Structural ($r=.12$) frames. A preference for Accommodation was associated with scores on the Structural ($r=-.23$), the Political ($r=.15$), and the Human Resource ($r=.13$) frames of reference. A preference for Avoidance of interpersonal conflict was most associated ($r=.10$) with the Symbolic frame orientation. A preference for Domination was most associated with an orientation toward the Symbolic ($r=.20$) and the Political ($r=.14$) frames.

The first canonical function reported in Table 7 had a squared canonical correlation coefficient (Rc^2) of .52. This first function reflects the dominant relationship between a

preference for Integrating (structure $r = r_s = .99$) and an orientation toward the Human Resource frame of reference ($r_s = .96$). It is noteworthy that no other variables were appreciably correlated with this function, as reflected in the squared structure coefficients presented in Table 7. Whatever these two variables share, the remaining variables do not contribute to or help explain this relationship.

The second canonical function reported in Table 7 had a squared canonical correlation of .11. As reflected in the structure coefficients reported in Table 7, this function involves a preference for Accommodation ($r_s = .84$) and Domination ($r_s = .50$) being associated with a preference for the Political ($r_s = .65$) and the Symbolic ($r_s = .47$) frames and an antipathy ($r_s = -.56$) for the Structural frame. This function implies the construct of a manipulator who is capable of passive aggressive organizational behavior and who is oriented toward politics and symbols and does not like rules. The complexity of the function illustrates the capacity of multivariate methods to isolate complex constructs that might otherwise be missed using univariate analyses.

The third canonical function reported in Table 7 had a squared canonical correlation of .06. As reflected in the structure coefficients reported in Table 7, this function involves a preference for Domination ($r_s = .64$) and Avoidance of interpersonal conflict ($r_s = .56$) and an antipathy for Accommodation ($r_s = -.46$) being associated with a preference for the Structural ($r_s = .71$) and the Symbolic ($r_s = .68$) frames of reference. This function implies a managerial type who likes to domineer without accommodation based on position power and subordinate loyalty to the organization.

The fourth canonical function reported in Table 7 had a squared canonical correlation of .002. As noted in the Table, the function was not statistically significant.

Therefore, because the function had both negligible effect size and was not significant (Thompson, 1987), the function is not interpreted.

6. SUMMARY

The results focusing on the measurement integrity of the Rahim Organizational Conflict Inventory (ROCI-II) were generally supportive of Rahim's (1983c) measure. The coefficient alpha results are reasonably comparable to those reported by Rahim (1983c, 1983b) and were superior to those reported by Fearing and Dean (1989). Additional work may be needed to add items that result in higher internal consistency for the scales.

The factor analytic results reported in Figure 1 and Table 4 suggest that the measure evaluates five dimensions, as postulated. However, Obliging and Compromising merged into a single construct labelled here, Accommodating. Avoidance split into two constructs, Avoidance of Interpersonal Conflict and Avoidance of Position Taking. The confirmatory factor analytic results suggest that the scales are not orthogonal constructs.

The results focusing on the measurement integrity of Roussel's (1989) Managerial Frames of Mind Survey were somewhat less favorable. The alpha coefficient for the Structural frame (.64) is appreciably lower than the value (.73) reported by Roussel (1989).

The exploratory factor analysis reported in Figures 2 and Table 5 were more supportive of the measure's integrity. However, the confirmatory analyses did not result in a reasonable fit of models to the data in hand. The results suggest the need for additional item refinement and construct elaboration.

The canonical analysis identified some intriguing manager archetypes. The dominant and unique relationship involved the association between a preference for

Integrating and an orientation toward the Human Relations frame of reference; this function represents a "people person" manager. Functions reflecting a passive aggressive type capable of manipulation and a domineering type who emphasizes structure and loyalty were also isolated. These relationships are sensible and remain to be further explored in future research.

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Table 4
Varimax-Rotated Structure Coefficients for ROCI-II
(n=369)

<i>Variable</i>	I	II	<i>Factor</i> III	IV	V
INTEGR05	.76114	.25672	-.01271	-.04763	.15341
INTEGR28	.75444	.00489	.03436	-.02782	.00502
INTEGR22	.75003	-.10955	-.01821	.03923	-.09255
INTEGR01	.71245	.13710	-.08847	-.01296	.14398
INTEGR12	.70637	.14807	-.03239	-.03916	-.01618
INTEGR04	.62538	.30500	.07200	-.17256	.14926
INTEGR23	.57794	.38467	.23874	-.05925	-.20306
OBLIGI02	.55731	.34223	.04942	.10849	.06761
OBLIGI11	-.20719	.68763	.12238	.05405	.02378
COMPRO15	.19733	.61166	.15395	-.13297	-.06476
OBLIGI10	.12585	.59277	.04897	.12061	.07077
COMPRO20	.19633	.55987	.08262	-.01528	.12007
COMPRO14	.20571	.55296	-.02346	-.14105	.42089
OBLIGI13	.10004	.52722	.05613	.13049	.03700
OBLIGI24	.41209	.48437	.17736	.02955	-.01073
OBLIGI19	.19620	.47378	.02156	.23014	-.02479
AVOIDI17	-.08693	.12255	.76653	.02511	-.10473
AVOIDI16	-.01591	.19464	.74215	.03263	.14444
AVOIDI26	-.03654	.05330	.69117	.12118	.33566
AVOIDI27	.20859	.12091	.66908	.01073	.15417
DOMINA09	-.19574	.10713	.05733	.76342	.03575
DOMINA25	-.11255	.17133	-.06992	.71927	.12993
DOMINA18	-.01310	-.03470	.15425	.69102	-.21390
DOMINA08	-.03686	.20158	-.00047	.61841	.33325
DOMINA21	.24108	-.11084	.04477	.51851	-.08472
AVOIDI06	-.02988	-.01865	.20700	.13001	.71252
AVOIDI03	.02641	-.03198	.42876	.04029	.58658
COMPRO07	.22627	.37340	.04166	-.16506	.57244

Note. The first six characters of the variable names indicate expected scale association, and the last two characters indicate the number of each item.

Table 5
Varimax-Rotated Structure Coefficients for Frames Measure
(n=369)

Variable	Factor			
	I	II	III	IV
RPOL4112	.78027	-.11516	.01686	-.06780
RPOL4504	.77171	-.27804	-.05422	.02435
RPOL4203	.76998	-.23805	-.07331	-.08368
RPOL3811	.76085	-.01631	.03306	-.20112
RHUM1715	.75997	.26626	.03272	.00997
RPOL5536	.74694	-.09201	.06439	.08403
RHUM2725	.72284	.39663	-.08404	.03662
RSYM5620	.70583	.07187	.19704	-.08015
RPOL3529	.70369	-.18354	.08872	.03275
RSYM5724	.67989	.04783	.20318	.24175
RSTR6017	.62829	.12591	.11075	.12062
RHUM2340	-.10375	.81573	.09327	.11245
RHUM2237	-.18668	.70837	.19385	-.10885
RHUM2541	-.01904	.70105	.08001	.08812
RHUM1263	-.05916	.69550	.15251	.13543
RHUM4031	-.05524	.68023	.21995	.02852
RHUM2848	-.05572	.61604	.28750	.11057
RHUM2402	.05517	.56736	.00930	-.05405
RHUM1649	-.01422	.55958	.42413	.03767
RHUM2613	.09623	.47133	.01863	.07376
RPOL4358	.14528	.39591	.31367	-.16512
RSYM5822	.07866	.10197	.65696	.12591
RSYM5427	-.04793	.28724	.65181	-.06824
RSYM4844	.09758	.12371	.63379	.09921
RSYM4735	.15952	.14344	.62606	.04878
RSTR3338	.01740	.29196	.56454	.13175
RSTR1021	-.12936	.31440	.54661	.22041
RSYM3957	.18410	.07068	.51092	-.33644
RSTR1109	-.09273	-.06532	.42437	.21471
RPOL4652	.08600	.12921	.35246	.11677
RPOL5050	.18925	-.20969	.29822	-.16874
RSTR0760	-.03264	.19203	.02403	.69018
RSTR3134	.06550	-.05427	.16726	.65875
RSTR0842	.02217	.17261	.18433	.56880
RSTR0955	.11993	-.15274	.09942	.54602
RPOL5251	.21066	-.23364	.24529	-.36202
RSTR3064	.02810	.32563	.26747	.33720

Note. The first character of the variable names indicates that each item was retained in the original study reported by Roussel (1989). The next three characters suggest the expected scale association. Characters five and six indicate the item's number in the original Roussel (1989) measure, while the last two characters indicate the number of each item in the present study.

Table 6
Interdomain Bivariate Correlation Matrix
(n=369)

<i>Rahim Factors</i>	<i>Frames Factor</i>			
	I	II	III	IV
I	-.1593	.6775	.0674	.1211
II	.1540	.1290	.0537	-.2292
III	.0896	-.0041	.1008	.0857
IV	.1373	-.0814	.1961	-.0001
V	.0269	-.0116	-.0304	-.0661

Note. Both intradomain correlation matrices are identity matrices, i.e., factors scores are perfectly correlated within sets.

Table 7
Canonical Correlation Results
(n=369)

<i>Factors</i>	<i>Funct.</i>	<i>Struct.²</i>	<i>Funct.</i>	<i>Struct.²</i>	<i>Funct.</i>	<i>Struct.²</i>	<i>Funct.</i>	<i>Struct.²</i>	<i>h²</i>
I	0.986	97.31%	0.004	0.00%	0.121	1.45%	-0.072	0.51%	99.28%
II	0.082	0.68%	0.844	71.20%	-0.455	20.75%	0.131	1.72%	94.35%
III	-0.008	0.01%	0.171	2.93%	0.561	31.51%	0.809	65.49%	99.94%
IV	-0.136	1.84%	0.496	24.57%	0.636	40.44%	-0.542	29.33%	96.19%
V	-0.040	0.16%	0.114	1.29%	-0.242	5.84%	0.172	2.95%	10.24%
Adequacy		20.00%		20.00%		20.00%		20.00%	
Rd		10.33%		2.21%		1.31%		0.05%	
Rc ²		51.65%		11.04%		6.57%		0.24%	
Rd		12.91%		2.76%		1.64%		0.06%	
Adequacy		25.00%		25.00%		25.00%		25.00%	
I	-0.230	5.27%	0.649	42.18%	0.163	2.65%	0.706	49.91%	100.00%
II	0.961	92.31%	0.208	4.31%	-0.111	1.22%	0.147	2.15%	100.00%
III	0.062	0.39%	0.471	22.21%	0.672	45.14%	-0.568	32.25%	100.00%
IV	0.143	2.03%	-0.559	31.30%	0.714	50.98%	0.396	15.69%	100.00%

Note. The likelihood ratio associated with the fourth of the four possible canonical correlation coefficients (.99763) was not statistically significant ($F=0.43$, $df=2/363$, $p=.65$). Since the factor scores were perfectly uncorrelated, each function coefficient (analogous to a regression beta weight) also equals the structure coefficient for each variable on a given function.

Figure 1
 "Scree" Plot for Prerotation Eigenvalues for the ROCI-II

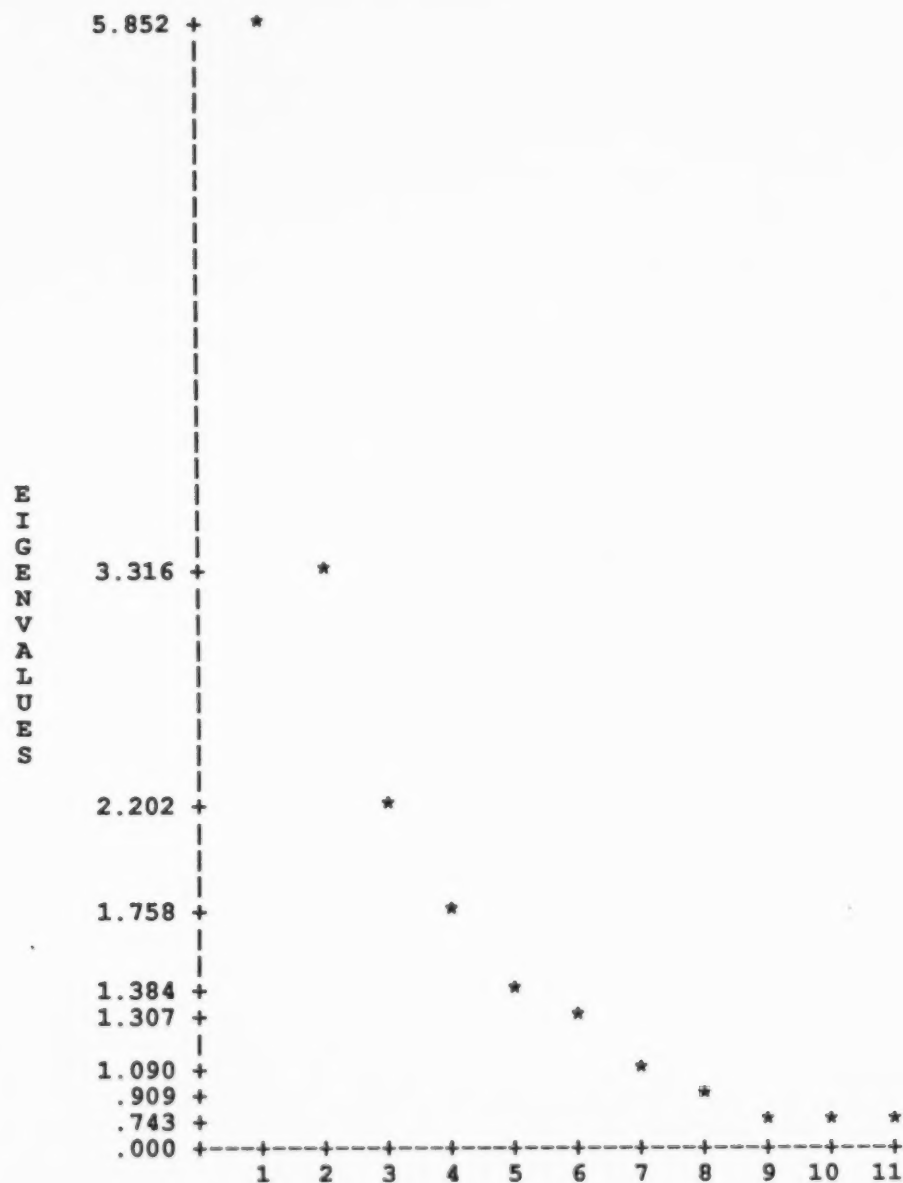


Figure 2
 "Scree" Plot for Prerotation Eigenvalues for the Frames Measure

